

WHAT IS CLAIMED IS:

1. A method of controlling communications for a network in which a plurality of terminals are connected via a shared communication channel, said method performed by
5 each of said plurality of terminals and comprising the steps of:

(a) giving a priority level to a first signal to be transmitted to another one of said plurality of terminals via said communication channel, said priority level being regulated in said network;

- (b) determining a first wait time having a length corresponding to said priority
10 level;

(c) monitoring said communication channel to check whether a signal transmission is present on said communication channel;

(d) sending out said first signal, if said signal transmission is not detected during said first wait time in said step (c); and

- 15 (e) returning to said step (b), if said signal transmission is detected during said first wait time in said step (c).

2. The method according to claim 1, wherein said first wait time is a sum of a predetermined first elementary time that is determined corresponding to said priority
20 level and a second elementary time that is determined based on a random number.

3. The method according to claim 1, wherein:

said each of said plurality of terminals is capable of sending, as said first signal, an ACK (Acknowledge) signal, which is a confirmatory response indicating that a signal
25 from another one of said plurality of terminals has been received; and

said first wait time corresponding to said priority level of said ACK signal is shorter than those corresponding to priority levels of other signals.

4. The method according to claim 3, wherein said each of said plurality of terminals further performs the step of (f) returning to said step (a) or said step (b), if said ACK signal is not received from another one of said plurality of terminals when a predetermined second wait time has elapsed after said first signal excluding said ACK signal was sent out in said step (d).

10 5. The method according to claim 3, wherein:

a relaying device for transmitting a signal from one of said plurality of terminals to another one of said plurality of terminals is further connected to said communication channel, said relaying device performing the steps of:

15 (g) monitoring said communication channel after receiving a second signal from said one of said plurality of terminals to check if said ACK signal is present on said communication channel; and

(h) sending out said second signal to said another one of said plurality of terminals, if said ACK signal is not detected during a predetermined third wait time in said step (g); and

20 said third wait time is shorter than said first wait time corresponding to said priority levels of other signals, which exclude said ACK signal.

6. The method according to claim 5, wherein said each of said plurality of terminals performs the steps of:

25 (i) returning to said (a) or said step (b), if said ACK signal is not received from

said another one of said plurality of terminals when a predetermined fourth wait time has elapsed after having sent out said first signal excluding said ACK signal in said step (d); and

- (j) extending said fourth wait time by a predetermined time length if said first
5 signal that has been sent from itself in said step (d) is received during said fourth wait time.